Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-9 (cancelled)

10. (Currently amended) A cover for operative sealing securement to a multi-well plate ~~having~~ comprising a surface defining a plurality of wells therein, the cover comprising:

a lid sized to overlie the multi-well plate, the lid comprising:

a curvilinear upper section;

opposed first and second parallel longitudinal side walls,

a gasket fixed to the underside of said upper section;

~~a~~ the curvilinear upper section dimensioned to overlie the multi-well plate surface and formed of a resiliently flexible material, ~~said~~ the curvilinear upper section having a concave shape in an initial, un-flexed position along a transverse cross-section along its entire length between said pair of opposed side walls , and

~~a plurality of~~ the first and second side walls, respectively, comprising opposed first and second ends, the first end of each side wall integrally depending ~~at an end thereof~~ from a respective peripheral side ~~sides~~ of the upper section of the lid and extending substantially perpendicular to the upper section of the lid,

each of the first and second side walls comprising at least one lateral projection extending directly from a lower edge of the sidewalls, respectively, to face laterally inwardly towards the respective other side wall of the first and second side walls for grasping engagement with a lower surface of the multi-well plate to secure the lid sealingly to the multi-well plate,

the side walls and upper section being ~~formed of the~~ sufficiently resiliently flexible for flexing the side walls from:

a first at rest position wherein the upper section is in the initial, unflexed position and at least one lateral projection of the first side wall is a predetermined distance apart from at least one lateral projection of the second side wall,

to a second position wherein at least one said lateral projection of the first side wall and at least one said lateral projection of the second side wall are

sufficiently further apart than in the first at rest position for flexing the side walls about the multi-well plate when the lid is placed above an upper surface of the multi-well plate,

to a third grasping position wherein the lateral projections extend under the lower surface of the multi-well plate and the at least one lateral projection of the first side wall and the at least one lateral projection of the second side wall are closer than in the second position and the upper section is in a final, flexed position, and

the upper section is sufficiently resiliently flexible for permitting the curvilinear concave shaped upper section to resiliently deform to straighten ~~material of the lid so that,~~ when the lid is positioned above the surface of the multi-well plate and downward force is applied to the lid to press the ~~cover~~ gasket against an upper surface of the multi-well plate ~~, the curvilinear concave shaped upper section resiliently deforms to cause the side walls to resiliently flex about the multi well plate and, with continued application of downward force, the side walls resiliently grasp the multi well plate to thereby straighten said upper section to a final, flexed position whereby the lid is secured to the multi well plate with the upper section in closely overlying relation to the multi well plate surface~~; and

~~a~~ the gasket fixed to an underside of the lid and dimensioned to compressingly abut the upper surface of the multi-well plate when the lid is sealingly secured to the multi-well plate and ~~thereby~~ seal the wells against ingress and egress of fluids and materials when the lid is sealingly secured to the multi-well plate;

the first side wall and second side wall extend downwardly from the top cover a sufficient length for the lateral projections to contact the lower surface of the multi-well plate in the third grasping position.

11. (Currently amended) The cover of claim 10, wherein the side walls further ~~include~~ comprise notched tabs with locator holes for facilitating the gripping of the cover by mechanical handling apparatus.

12. (Currently amended) The cover of claim 10, wherein the side walls further ~~include~~ comprise stacking lugs projecting downward from the side walls lower edges, respectively, a distance lower than the lateral projections.

13. (Currently amended) The cover of claim 10, wherein the side walls further ~~include~~ comprise means for laterally and longitudinally aligning the cover with an adjacent cover when the cover is in a stack of like covers.

14. (Currently amended) The cover of claim ~~13~~ 12, wherein the side walls further ~~include~~ comprise stacking locators positioned in the side walls, the stacking locators being positioned to engage the stacking lugs of an adjacent cover for laterally and longitudinally aligning the cover with the adjacent cover when the cover is in a stack of like covers ~~lugs projecting downward from the side walls~~.

15. (Currently amended) The cover of claim ~~14~~ 12, wherein the side walls define ~~means for aligning includes stacking locators~~ slots positioned in the side walls ~~, the stacking locators being positioned~~ to engage the stacking lugs of ~~the~~ an adjacent cover for laterally and longitudinally aligning the cover with the adjacent cover when the cover is in a stack of like covers.

16. (Currently amended) The cover of claim 10, wherein each side wall ~~includes~~ comprises a clamp for engaging an edge of the multi-well plate, the clamp being located on the side wall second end ~~at an end opposite to the end of the side wall at which the side wall depends from the upper section of the lid~~.

17. (Previously presented) The cover of claim 10, wherein the gasket comprises a thermoplastic polymer having a durometer of Shore 15A and having a high degree of chemical resistance to dimethyl sulfoxide.

18. (Previously presented) The cover of claim 10, wherein the gasket comprises an elastomer having a durometer of Shore 15A and having a high degree of chemical resistance to dimethyl sulfoxide.

19. (Previously presented) The cover of claim 10, wherein the lid is formed of a material selected from the group consisting of steel, stainless steel, spring steel and stainless spring steel, and has a thickness of between about 0.015" and about 0.024".

20. (Cancelled)

21. (Cancelled).

22. (Currently amended) An assembly of a multi-well plate and a cover for the multi-well plate, wherein:

the plate comprises

an upper surface,

a plurality of wells having openings disposed in the upper surface, and a skirt disposed on an edge of the plate; and

a cover for operative sealing securement to a multi-well plate ~~having~~ comprising a surface defining said plurality of wells therein, the cover comprising:

a lid sized to overlie the multi-well plate, the lid comprising:

a curvilinear upper section;

opposed first and second parallel longitudinal side walls,

a gasket fixed to the underside of said upper section;

~~a~~ the curvilinear upper section dimensioned to overlie the multi-well plate surface and formed of a resiliently flexible material, ~~said~~ the curvilinear upper section having a concave shape in an initial, un-flexed position along a transverse cross-section along its entire length between said pair of opposed side walls , and

~~a plurality of~~ the first and second side walls, respectively, comprising opposed first and second ends, the first end of each side wall integrally depending from a respective peripheral side ~~sides~~ of the upper section of the lid and extending substantially perpendicular to the upper section of the lid,

each of the first and second side walls comprising at least one lateral projection extending directly from a lower edge of the sidewalls, respectively, to face laterally inwardly towards the respective other side wall of the first and second side walls for grasping engagement with a lower surface of the multi-well plate to secure the lid sealingly to the multi-well plate,

the side walls and upper section being ~~formed of the~~ sufficiently resiliently flexible for flexing the side walls from:

a first at rest position wherein the upper section is in the initial, unflexed position and at least one lateral projection of the first side wall is a predetermined distance apart from at least one lateral projection of the second side wall,

to a second position wherein at least one said lateral projection of the first side wall and at least one said lateral projection of the second side wall are sufficiently further apart than in the first at rest position for flexing the side walls about the multi-well plate when the lid is placed above an upper surface of the

multi-well plate,

to a third grasping position wherein the lateral projections extend under the lower surface of the multi-well plate and the at least one lateral projection of the first side wall and the at least one lateral projection of the second side wall are closer than in the second position and the upper section is in a final, flexed position, and

the upper section is sufficiently resiliently flexible for permitting the curvilinear concave shaped upper section to resiliently deform to straighten ~~material of the lid so that,~~ when the lid is positioned above the surface of the multi-well plate and downward force is applied to the lid to press the ~~cover~~ gasket against an upper surface of the multi-well plate ~~, the curvilinear concave shaped upper section resiliently deforms to cause the side walls to resiliently flex about the multi-well plate and, with continued application of downward force, the side walls resiliently grasp the multi-well plate to straighten said upper section to a final, flexed position whereby the lid is secured to the multi-well plate with the upper section in closely overlying relation to the multi-well plate surface~~; and

~~a~~ the gasket fixed to an underside of the lid and dimensioned to compressingly abut the upper surface of the multi-well plate when the lid is sealingly secured to the multi-well plate and ~~thereby~~ seal the wells against ingress and egress of fluids and materials when the lid is sealingly secured to the multi-well plate;

the first side wall and second side wall extend downwardly from the top cover a sufficient length for the lateral projections to contact the lower surface of the multi-well plate in the third grasping position; and

wherein the upper section has opposed peripheral longitudinal sides integral with said sidewalls respectively, and wherein the lateral projections are located a sufficient distance below an upper edge of the respective sidewall for urging the opposed peripheral longitudinal sides of the lid towards the upper surface of the plate to compress the gasket between the underside of the lid and the upper surface of the multi-well plate when the side walls are in the third grasping position.

23. (Currently amended) The assembly of claim 22, wherein the ~~upper section of the lid is curvilinear~~ side walls further comprise stacking lugs projecting downward from the side

walls lower edges, respectively, a distance lower than the lateral projections.

24. (Currently amended) The assembly of claim 22, wherein the curvilinear upper section of the lid is sufficiently curved ~~so that when~~ for spacing opposed peripheral longitudinal side portions of the surface of the gasket facing the upper surface of the multi-well plate from the upper surface of the multi-well plate when an intermediate portion of the surface of the gasket facing the upper surface of the multi-well plate contacts the upper surface of the multi-well plate when the curvilinear upper section is at rest~~, and a point of the gasket intermediate the sides of the lid contacts the upper surface of the multi-well plate, sides of the gasket affixed to the sides of the lid are not in contact with the upper surface of the multi-well plate~~.

25. (Cancelled).

26. (New) The assembly of claim 23, wherein the side walls further comprise stacking locators positioned in the side walls, the stacking locators being positioned to engage the stacking lugs of the adjacent cover.

27. (New) The assembly of claim 23, wherein the side walls define slots positioned in the side walls to engage the stacking lugs of the adjacent cover.

28. (New) The assembly of claim 23, wherein each lateral projection comprises a convex portion having a transverse convex cross-section, the topmost peak of the convex portion being higher than a location from which the lateral projection initially extends from the side wall.

29. (New) The assembly of claim 23, wherein the innermost end of the lateral projection points downwardly.

30. (New) The cover of claim 10, wherein each lateral projection comprises a convex portion having a transverse convex cross-section, the topmost peak of the convex portion being higher than a location from which the lateral projection initially extends from the side wall.

31. (New) The cover of claim 10, wherein the innermost end of the lateral projection points downwardly.

32. (New) A cover for operative sealing securement to a multi-well plate comprising a surface defining a plurality of wells therein, the cover comprising:

a lid sized to overlie the multi-well plate, the lid comprising:

a curvilinear upper section;

opposed first and second parallel longitudinal side walls,

a gasket fixed to the underside of said upper section;

the curvilinear upper section dimensioned to overlie the multi-well plate surface and formed of a resiliently flexible material, the curvilinear upper section having a concave shape in an initial, un-flexed position along a transverse cross-section along its entire length between said pair of opposed side walls , and

the first and second side walls, respectively, comprising opposed first and second ends, the first end of each side wall integrally depending from a respective peripheral side of the upper section of the lid and extending substantially perpendicular to the upper section of the lid,

each of the first and second side walls comprising at least one lateral projection extending directly from the sidewalls, respectively, to face laterally inwardly towards the respective other side wall of the first and second side walls for grasping engagement with the multi-well plate to secure the lid sealingly to the multi-well plate,

the side walls and upper section being sufficiently resiliently flexible for flexing the side walls from:

a first at rest position wherein the upper section is in the initial, unflexed position and at least one lateral projection of the first side wall is a predetermined distance apart from at least one lateral projection of the second side wall,

to a second position wherein at least one said lateral projection of the first side wall and at least one said lateral projection of the second side wall are sufficiently further apart than in the first at rest position for flexing the side walls about the multi-well plate when the lid is placed above an upper surface of the multi-well plate,

to a third grasping position wherein the lateral projections grasp the multi-well plate and the at least one lateral projection of the first side wall and the at least one lateral projection of the second side wall are closer than in the second position and the upper section is in a final, flexed position, and

the upper section is sufficiently resiliently flexible for permitting the curvilinear concave shaped upper section to resiliently deform to straighten when the lid is

positioned above the surface of the multi-well plate and downward force is applied to the lid to press the gasket against an upper surface of the multi-well plate; and

the gasket fixed to an underside of the lid and dimensioned to compressingly abut the upper surface of the multi-well plate when the lid is sealingly secured to the multi-well plate and seal the wells against ingress and egress of fluids and materials when the lid is sealingly secured to the multi-well plate;

wherein each said side wall further comprises at least one stacking lug projecting downward from a lower edge of the respective side wall a distance lower than the respective at least one lateral projection.

33. (New) The cover of claim 32, wherein the side walls further comprise stacking locators positioned in the side walls, the stacking locators being positioned to engage the stacking lugs of the adjacent cover.

34. (New) The cover of claim 32, wherein the side walls define slots positioned in the side walls to engage the stacking lugs of the adjacent cover.

35. (New) An assembly of a multi-well plate and a cover for the multi-well plate, wherein:

the plate comprises

an upper surface,

a plurality of wells having openings disposed in the upper

surface, and a skirt disposed on an edge of the plate; and

a cover for operative sealing securement to a multi-well plate comprising a surface defining said plurality of wells therein, the cover comprising:

a lid sized to overlie the multi-well plate, the lid comprising:

a curvilinear upper section;

opposed first and second parallel longitudinal side walls,

a gasket fixed to the underside of said upper section;

the curvilinear upper section dimensioned to overlie the multi-well plate surface and formed of a resiliently flexible material, the curvilinear upper section having a concave shape in an initial, un-flexed position along a transverse cross-section along its entire length between said pair of opposed side walls , and

the first and second side walls, respectively, comprising opposed first and second

ends, the first end of each side wall integrally depending from a respective peripheral side of the upper section of the lid and extending substantially perpendicular to the upper section of the lid,

each of the first and second side walls comprising at least one lateral projection extending directly from the sidewalls, respectively, to face laterally inwardly towards the respective other side wall of the first and second side walls for grasping engagement with the multi-well plate to secure the lid sealingly to the multi-well plate,

the side walls and upper section being sufficiently resiliently flexible for flexing the side walls from:

a first at rest position wherein the upper section is in the initial, unflexed position and at least one lateral projection of the first side wall is a predetermined distance apart from at least one lateral projection of the second side wall,

to a second position wherein at least one said lateral projection of the first side wall and at least one said lateral projection of the second side wall are sufficiently further apart than in the first at rest position for flexing the side walls about the multi-well plate when the lid is placed above an upper surface of the multi-well plate,

to a third grasping position wherein the lateral projections grasp the multi-well plate and the at least one lateral projection of the first side wall and the at least one lateral projection of the second side wall are closer than in the second position and the upper section is in a final, flexed position, and

the upper section is sufficiently resiliently flexible for permitting the curvilinear concave shaped upper section to resiliently deform to straighten when the lid is positioned above the surface of the multi-well plate and downward force is applied to the lid to press the gasket against an upper surface of the multi-well plate; and

the gasket fixed to an underside of the lid and dimensioned to compressingly abut the upper surface of the multi-well plate when the lid is sealingly secured to the multi-well plate and seal the wells against ingress and egress of fluids and materials when the lid is sealingly secured to the multi-well plate;

wherein each said side wall further comprises at least one stacking lug projecting downward from a lower edge of the respective side wall a distance lower than the respective at

least one lateral projection; and

wherein the upper section has opposed peripheral longitudinal sides integral with said sidewalls respectively, and wherein the lateral projections are located a sufficient distance below an upper edge of the respective sidewall for urging the opposed peripheral longitudinal sides of the lid towards the upper surface of the plate to compress the gasket between the underside of the lid and the upper surface of the multi-well plate when the side walls are in the third grasping position.

36. (New) The cover of claim 35, wherein the side walls further comprise stacking locators positioned in the side walls, the stacking locators being positioned to engage the stacking lugs of the adjacent cover.

37. (New) The cover of claim 35, wherein the side walls define slots positioned in the side walls to engage the stacking lugs of the adjacent cover.